

# NEW APPLICATION



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BEFORE THE ARIZONA CORPORATION COMMISSION  
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AZ CORP COMMISSION  
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IN THE MATTER OF THE APPLICATION OF  
TUCSON ELECTRIC POWER COMPANY FOR  
APPROVAL OF ITS 2016 ENERGY EFFICIENCY  
IMPLEMENTATION PLAN AND FOR WAIVER  
UNDER A.A.C. R14-2-2419.

DOCKET NO. E-01933A-15-0178

APPLICATION

Tucson Electric Power Company ("TEP") or ("Company"), through undersigned counsel, hereby submits its 2016 Energy Efficiency Implementation Plan ("2016 Plan") for Arizona Corporation Commission ("Commission") review and approval, in compliance with A.A.C. R14-2-2401, *et seq.* In conjunction with the approval of its 2016 Plan, TEP is requesting (among other things) a change in the Demand Side Management Surcharge (DSMS) from \$0.002311 to \$0.002905 for residential customers. TEP is also requesting a waiver under A.A.C. R14-2-2419 of the Energy Efficiency Standard set forth in A.A.C. R14-2-2404.B.

TEP hereby requests that the Commission approve TEP's 2016 Plan prior to December 31, 2015 and to grant the requested waiver of the Energy Efficiency Standard.

RESPECTFULLY SUBMITTED this 1st day of June 2015.

ORIGINAL

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By

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**TUCSON ELECTRIC POWER COMPANY  
2016  
ENERGY EFFICIENCY  
IMPLEMENTATION PLAN**

**JUNE 1, 2015**

TUCSON ELECTRIC POWER COMPANY  
2016  
ENERGY EFFICIENCY  
IMPLEMENTATION PLAN

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## I. 2016 Implementation Plan Executive Summary

Tucson Electric Power Company ("TEP" or the "Company") hereby submits its 2016 Energy Efficiency Implementation Plan ("EE Plan") for Arizona Corporation Commission ("Commission") approval, in compliance with Arizona Administrative Code ("A.A.C.") R14-2-2405 which requires TEP to describe how it intends to meet the energy efficiency standards for the next year.

The Company estimates a 2016 EE Plan budget total of approximately \$23 million, compared with the currently approved EE Plan budget for 2015 of approximately \$19 million. Accordingly if Commission approves the requested budget, the DSM Surcharge ("DSMS") will reset from \$0.002311 to \$0.002905 per kWh for residential customers. This new rate would increase average residential bills by an estimated \$0.48 per month, assuming average monthly usage of 800 kWhs. The 2016 EE Plan budget includes a performance incentive of approximately \$1.78 million for the 2015 EE savings which was calculated based on the methodology approved by the Commission in Decision No. 73912 (June 27, 2013). The Company is coming closer to meeting the cumulative EE Standard set forth in A.A.C. R14-2-2404.B (Decision No.74885), however it does not expect to cost effectively meet the standard in 2016. As a result, TEP is requesting a waiver from the 2016 EE Standard in accordance with A.A.C. R14-2-2419.B. The Commission also approved waivers for TEP from the 2014 and 2015 EE Standards

A summary of the portfolio budget, portfolio savings, net benefits, and benefit-cost results appear in Table 1-1.

**Table 1-1. Summary of Portfolio Costs and Saving**

Program Year	Total Program Budget	Annual Energy Savings (MWh)	Lifetime Energy Savings (MWh)	Peak Demand Savings (MW)	\$/kWh (Lifetime)	Portfolio Societal Test Ratio
2016	\$22,970,226	151,348	1,409,212	34.81	\$0.16	3.0

TEP's EE Plan includes the following new cost-effective measures that complement the Company's existing programs, leverage existing technologies and respond to interest expressed by customer:

- ENERGY STAR home appliances as part of the Efficient Products program
- HVAC Advanced Tune-ups and Smart Thermostats as part of the Existing Homes program
- HVAC tune-ups, duct test and repairs, and LEDs as part of the Multi-family program
- LED Outdoor Lighting, Energy Intelligence Software, and other C&I measures
- LED Outdoor Lighting and other Commercial measures for Small Business Direct Installs

The Company's EE Plan includes the continuation of its existing cost-effective programs without modification, including:

- Appliance Recycling
- Residential New Construction
- Low Income Weatherization
- Shade Tree
- Behavioral Comprehensive

- Commercial New Construction
- Bid for Efficiency (“BFE”)
- Retro-Commissioning (“RCx”)
- CHP
- Codes and Standards
- Utility Improvement
- Commercial Direct Load Control
- Consumer Education and Outreach

TEP believes its 2016 EE Plan includes cost-effective programs that meet the needs of TEP’s customers, and is in the public interest.

TEP respectfully requests approval of the following:

- (i) TEP’s 2016 EE Plan;
- (ii) The EE Standard set forth in A.A.C. R14-2-2404(B) be waived for 2016, consistent with 2014 and 2015;
- (iii) The DSMS shall be reset from \$.002311 to \$.002905 per kWh (Residential)/2.99% of total bill, before RES, LFCR, assessments and taxes (Non-residential).

TEP respectfully requests Commission approval of its 2016 EE Plan on or before December 31, 2015.

## II. Program Portfolio Overview

TEP's portfolio of programs consists of residential, commercial, behavioral, and support sectors. Administrative functions provide support across all program areas. Information regarding existing programs and new measures is located in Section III through Section VII.

### A. 2016 Savings, Budgets, Benefit-Cost Results

This EE Plan includes a portfolio of programs that are consistent with the requirements of the EE Standard. TEP will continue to monitor program participation and effectiveness, projected funding levels, and will make adjustments to program budgets if necessary. Additionally, incentive levels and other program elements will be reviewed and modified on an annual basis to reflect changes in market conditions or implementation processes, in order to maximize cost-effective savings. Such modifications will be reported in the annual reports submitted to the Commission. The 2016 EE Plan budget includes a performance incentive of approximately \$1.78 million for the 2015 savings, which was calculated based on the methodology approved by the Commission in Decision No. 73912 (June 27, 2013). TEP's performance incentive for 2014 savings was \$2,783,923.

Table 2-1 shows a summary of the costs and energy savings, total net benefits, and the benefit-cost ratio using the Societal Cost Test for the 2016 EE Plan portfolio. Table 2-2 illustrates compliance with the EE Standard for the years 2011-2016, with forecasts for 2015 and 2016 based upon projected participation. The 2016 forecast EE savings assume the Commission approves the EE measures included in the Company's 2016 EE Plan.

**Table 2-1. Summary of Portfolio Costs and Savings Using the Societal Cost Test**

Program Year	Total Program Budget	Annual Energy Savings (MWh)	Lifetime Energy Savings (MWh)	Peak Demand Savings (MW)	\$/kWh (Lifetime)	Portfolio Societal Test Ratio
2016	\$22,970,226	151,348	1,409,212	34.81	\$0.016	3.0

**Table 2-2. TEP Compliance with EE Standard for Years 2011-2016**

Year <sup>1</sup>	Retail Energy Sales (MWh)	Incremental Annual Energy Savings (MWh)	Cumulative Annual Energy Savings (MWh)	Cumulative Annual Savings as a % of previous year Retail Sales	Cumulative EE Standard
2010	9,291,788				
2011	9,332,107	139,539	139,539	1.50%	1.25%
2012	9,264,818	105,655	245,194	2.63%	3.00%
2013	9,278,918	177,425	422,619	4.56%	5.00%
2014	9,165,354	219,114	641,733	6.92%	7.25%
2015	8,521,244	145,506	787,239	8.59%	9.50%
2016	8,734,703	151,348	938,587	11.01%	12.00%

Table 2-3 provides cost and savings details per program for 2016. Table 2-4 shows the program budgets by expense category.

<sup>1</sup> 2015 and 2016 forecasted sales exclude Freeport McMoRan which sales are exempted from the EE Standard.

**Table 2-3. 2016 Costs and Savings by Program**

Program Name	Annual Energy Savings at Generator (MWh)	Coincident Demand Savings at Generator (MW)	Total Program Budget	Cost per Lifetime kWh Saved (\$/kWh)	Cost per First Year kWh Saved (\$/kWh)
<b>Residential Sector</b>					
Efficient Products	52,984	5.32	\$4,757,553	\$0.01	\$0.09
Appliance Recycling	2,789	0.43	\$416,200	\$0.02	\$0.15
Residential New Construction	1,158	0.94	\$479,537	\$0.01	\$0.41
Existing Homes	9,560	9.11	\$5,237,642	\$0.05	\$0.55
Shade Tree	477	0.23	\$294,219	\$0.02	\$0.62
Low-Income Weatherization	428	0.05	\$451,873	\$0.07	\$1.06
Multi-Family	2,151	1.27	\$808,542	\$0.03	\$0.38
<b>Subtotal</b>	<b>69,548</b>	<b>17.34</b>	<b>\$12,445,566</b>	<b>\$0.02</b>	<b>\$0.18</b>
<b>Commercial Sector</b>					
C&I Comprehensive	29,301	8.61	\$3,643,703	\$0.01	\$0.12
Small Business Direct Install	6,609	2.36	\$1,891,657	\$0.02	\$0.29
Commercial New Construction	3,735	2.08	\$572,800	\$0.01	\$0.15
Bid for Efficiency	1,752	0.98	\$200,000	\$0.01	\$0.11
Retro-Commissioning	1,314	0.73	\$212,000	\$0.02	\$0.16
Combined Heat & Power	504	0.00	\$5,500	\$0.00	\$0.01
C&I Demand Response	18,946	0.00	\$1,741,300	\$0.10	\$0.09
<b>Subtotal</b>	<b>62,161</b>	<b>14.76</b>	<b>\$8,266,959</b>	<b>\$0.11</b>	<b>\$0.24</b>
<b>Behavioral Sector</b>					
Behavioral Comprehensive Program	6,010	0.63	\$725,818	\$0.02	\$0.12
<b>Subtotal</b>	<b>6,010</b>	<b>0.63</b>	<b>\$725,818</b>	<b>\$0.02</b>	<b>\$0.12</b>
<b>Utility Improvement</b>					
Conservation Voltage Reduction	504	0.07	\$0.00	N/A	N/A
<b>Support Sector</b>					
Consumer Education and Outreach	0.00	0.00	\$663,883	N/A	N/A
Energy Codes & Standards Enhancement	13,125	2.01	\$173,000	\$0.01	\$0.01
Program Development, Analysis, and Reporting	0.00	0.00	\$695,000	N/A	N/A
<b>Subtotal</b>	<b>13,125</b>	<b>2.01</b>	<b>\$1,531,883</b>	<b>\$0.01</b>	<b>\$0.01</b>
<b>Portfolio Total</b>	<b>151,348</b>	<b>34.81</b>	<b>\$22,970,226</b>	<b>\$0.016</b>	<b>\$0.15</b>



**Table 2-4. 2016 Program Budgets by Category**

<b>Program</b>	<b>Incentives</b>	<b>Program Delivery</b>	<b>Program Marketing</b>	<b>Utility Program Administration</b>	<b>Evaluation</b>	<b>Total Budget</b>
<b>Residential Sector</b>						
Efficient Products	\$3,358,252	\$924,264	\$234,079	\$111,070	\$129,888	\$4,757,553
Appliance Recycling	\$60,000	\$280,000	\$50,000	\$14,500	\$11,700	\$416,200
Residential New Construction	\$240,000	\$107,663	\$100,000	\$18,444	\$13,430	\$479,537
Existing Homes	\$2,658,461	\$2,069,181	\$300,000	\$150,000	\$60,000	\$5,237,642
Shade Tree	\$237,553	\$28,591	\$20,000	\$0	\$8,075	\$294,219
Low-Income Weatherization	\$376,107	\$23,238	\$20,884	\$15,416	\$16,229	\$451,873
Multi-Family	\$385,773	\$361,147	\$7,880	\$31,098	\$22,644	\$808,542
<b>Subtotal</b>	<b>\$7,316,146</b>	<b>\$3,794,084</b>	<b>\$732,843</b>	<b>\$340,527</b>	<b>\$261,966</b>	<b>\$12,445,566</b>
<b>Commercial Sector</b>						
C&I Facilities	\$2,023,703	\$1,202,000	\$190,000	\$114,000	\$114,000	\$3,643,703
Small Business Direct Install	\$891,657	\$725,000	\$125,000	\$75,000	\$75,000	\$1,891,657
Commercial New Construction	\$332,800	\$174,000	\$30,000	\$18,000	\$18,000	\$572,800
Bid for Efficiency	\$120,000	\$58,000	\$10,000	\$6,000	\$6,000	\$200,000
Retro-Commissioning	\$132,000	\$58,000	\$10,000	\$6,000	\$6,000	\$212,000
Combined Heat & Power	\$0.0	\$3,500	\$0.00	\$1,000	\$1,000	\$5,500
C&I Demand Response	\$0.00	\$1,556,500	\$87,000	\$2,200	\$45,600	\$1,741,300
<b>Subtotal</b>	<b>3,500,159</b>	<b>3,777,000</b>	<b>452,000</b>	<b>272,200</b>	<b>265,600</b>	<b>8,266,959</b>
<b>Behavioral Sector</b>						
Behavioral Comprehensive Program	\$371,903	\$196,000	\$101,105	\$32,873	\$23,937	\$725,818
<b>Subtotal</b>	<b>\$371,903</b>	<b>\$196,000</b>	<b>\$101,105</b>	<b>\$32,873</b>	<b>\$23,937</b>	<b>\$725,818</b>
<b>Utility Improvement</b>						
Conservation Voltage Reduction	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>Support Sector</b>						
Consumer Education and Outreach	\$0.00	\$183,547	\$461,000	\$19,336	\$0.00	\$663,883
Energy Codes & Standards Enhancement	\$0.00	\$110,000	\$0.00	\$13,000	\$50,000	\$173,000
Program Development, Analysis, and Reporting	\$0.00	\$695,000	\$0.00	\$0.00	\$0.00	\$695,000
<b>Subtotal</b>	<b>\$0.00</b>	<b>\$988,547</b>	<b>\$461,000</b>	<b>\$32,336</b>	<b>\$50,000</b>	<b>\$1,531,883</b>
<b>Total</b>	<b>\$11,188,208</b>	<b>\$8,755,630</b>	<b>\$1,746,948</b>	<b>\$677,936</b>	<b>\$601,503</b>	<b>\$22,970,226</b>
<b>Percent of Cost by Category</b>	<b>49%</b>	<b>38%</b>	<b>8%</b>	<b>3%</b>	<b>3%</b>	<b>100%</b>

### **III. Residential Programs**

This section presents updates to TEP's residential programs, specifically new measures and changes consistent with the requirements of A.A.C. R-14-2-2407. This section also presents a summary discussion of TEP's residential programs.

#### **A. Efficient Products**

*TEP is requesting budget approval for existing measures and approval to offer six (6) additional measures in 2016.*

##### **1. Program Description**

The Efficient Products program promotes the purchase of energy efficient retail products through in-store buy-down promotions and the promotion of EE products in general. This program has been in existence since 2008, and was most recently approved by the Commission in Decision No. 74885.

##### **2. Program Objectives and Rationale**

The program offers customers opportunities to reduce their energy consumption by purchasing energy efficient retail products, and furthers the transformation of the market through retail partnerships, training of retail staff, and increased stocking and selection of efficient retail products.

##### **3. Delivery and Marketing Strategy**

No significant changes are anticipated in the implementation, approach, or delivery strategy for Efficient Products program. The program is primarily marketed through mass-market channels (e.g., radio, newspaper, website, etc.) or through education and training of participating retailers.

##### **4. New Measure for 2016**

TEP is requesting approval to add six **ENERGY STAR**® measures to the measures currently approved in the Efficient Products program. These ENERGY STAR® measures passed cost-effectiveness screening by ACC Staff in Decision No. 74885 (December 31, 2014) and are listed in Appendix 1-B thereof. The measures were not recommended for approval in the 2015 program. TEP is requesting Commission reconsideration for approval of these items due to the positive societal cost test for each measure.

Table 3-1 presents new measures to be incentivized by the program in 2016.

**Table 3-1. Efficient Products New Measures<sup>2</sup>**

	Program Measures	Base Efficiency	High Efficiency	Avg. Incentive p Unit	Estimated Participation	Societal Cost Test
1	ENERGY STAR <sup>®</sup> ceiling fan	Conventional fan	ENERGY STAR <sup>®</sup>	\$30	100	1.3
2	ENERGY STAR <sup>®</sup> freezer	Conventional freezer	ENERGY STAR <sup>®</sup>	\$10	25	2.8
3	ENERGY STAR <sup>®</sup> central air conditioner	13 SEER	ENERGY STAR <sup>®</sup> 14.5 SEER	\$300	100	5.2
4	ENERGY STAR <sup>®</sup> clothes washer	Conventional washer	ENERGY STAR <sup>®</sup>	\$50	200	3.8
5	ENERGY STAR <sup>®</sup> refrigerator	Conventional refrigerator	ENERGY STAR <sup>®</sup>	\$20	75	1.9
6	ENERGY STAR <sup>®</sup> room air conditioner	Conventional unit	ENERGY STAR <sup>®</sup>	\$35	100	1.9

#### 5. Cost-Effectiveness

In Decision No. 74885 the Commission determined each measure to be cost-effective. TEP will continue to monitor the cost-effectiveness of the program. Cost-effectiveness detail for the existing and new measures is provided in Exhibit 1.

#### 6. Measurement, Evaluation, and Research Plan

The Measurement, Evaluation, and Research (“MER”) Plan is consistent with the previously filed strategy.

### **B. Appliance Recycling**

*TEP is requesting budget approval to continue this program with no additional modifications.*

#### 1. Program Description

The Appliance Recycling program is an existing program approved by the Commission in Decision No. 74885. The program targets the removal and recycling of operable, but redundant, refrigerators and freezers. An appliance recycling contractor provides turnkey implementation services that include verification of customer eligibility, scheduling of pick-up appointments, appliance pick-up, and recycling services.

#### 2. Program Objectives and Rationale

The objective of the program is to produce long-term electric energy savings in the residential sector by permanently removing operable, but redundant, refrigerators and freezers from the power grid and recycling them in an environmentally safe manner.

<sup>2</sup> Additional detail on lifetime energy savings, societal benefits/costs, and environmental benefits of new measures is included in Exhibit 1.

3. Delivery and Marketing Strategy

The program delivery strategy consists of a third party Implementation Contractor (“IC”) who provides implementation services, including eligibility verification, and scheduling of pick-ups and delivery to proper disposal and recycling centers. The IC also coordinates prompt processing of incentive payments.

The program is primarily marketed through mass-market channels (e.g. radio, newspaper, website, etc.) and through brochures. Materials carry a strong consumer education message and leverage the ENERGY STAR® brand. The program is also marketed at retail point-of-sale to increase customer awareness of the program.

4. New Measures for 2016

No new measures are included for 2016.

5. Cost-Effectiveness

In Decision No. 74885, the Commission determined each measure to be cost-effective. TEP will continue to monitor the cost-effectiveness of the program. Cost-effectiveness detail for the existing measures is provided in Exhibit 1.

6. Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

7. Other Information

In 2015, TEP will utilize actual savings from the UNSE Appliance Recycling Program. The demand and energy savings estimate for refrigerators and freezers were re-evaluated in 2015 as part of the MER for the UNSE Appliance Recycling program for the 2014 program year. Once this program has been in operation for a full year, savings estimates will be based on actual savings from installations in the TEP service territory.

C. **Residential New Construction**

*TEP is requesting budget approval to continue this program with no additional modifications.*

1. Program Description

The Residential New Construction program is an existing program with the goal of incenting builders to build more energy efficient homes. To qualify for an incentive, homes must be tested by an approved energy rater, and meet construction standards supported by a Home Energy Rating System (“HERS”) Index score  $\leq 65$ . On the HERS index scale, a score of 100 is considered the average efficiency of baseline new construction. A HERS index score of 0 represents a home that produces all of its energy through on-site generation from renewable energy. Therefore, the lower the HERS score, the more efficient the home. All qualifying homes require a minimum HERS of  $\leq 65$ . The incentive is \$400 per home.

2. Program Objectives and Rationale

The objectives of the program are to promote energy efficient building practices. This is accomplished through builder training, customer awareness, and the promotion of energy efficient homes to consumers.

3. Delivery and Marketing Strategy

The program will continue to be delivered by TEP staff. TEP will provide program management oversight and marketing as well as recruitment, training, and mentorship of participating builders and sub-contractors, data tracking, rebate processing, and technical support. The program is marketed to select builders primarily through direct business-to-business contacts. The program is also marketed to consumers at home shows and other events focused on home-building, as well as advertised through mass-market and targeted media outlets.

4. New Measures for 2016

No new measures are included for 2016.

5. Cost-Effectiveness

In Decision No. 74885 the Commission determined the program to be cost-effective. TEP will continue to monitor the cost-effectiveness of the program. Cost-effectiveness detail for the existing measures is provided in Exhibit 1.

6. Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

7. Other Information

TEP conducts MER using billing analysis from previous participants to derive a TEP-specific relationship between HERS Scores and energy savings for the Tucson climate zone. Energy and demand estimates have been updated from previous assumptions using this more detailed energy savings assessment.

**D. Existing Homes**

***TEP is requesting budget approval to continue this program with all previous measures and requests approval for three (3) new HVAC tune-up measures and smart thermostats.***

1. Program Description

The Existing Homes program is an existing program targeted to existing homes in need of EE improvements. The current program measures concentrate on duct sealing and installation of new high-efficiency HVAC equipment installation combined with quality install best practices. TEP is requesting approval to add Advanced tune-up, Western cooling controls (WCC), and BPM/ECM plus efficient motors as HVAC tune-up components and Smart thermostats to the Existing Homes program in 2016.

## 2. Program Objectives and Rationale

The objective for new HVAC installation is to achieve energy and demand savings from the proper installation of air conditioners and heat pumps by promoting the early retirement of older, low-efficiency units or incenting new installations that meet the program's quality installation requirements. The Company will continue to promote duct test and repair either as a stand-alone offering or in conjunction with installation of new units. The program will continue to provide training and mentorship for participating contractors to assure proper refrigerant charge, air-flow, combustion safety, and elimination of duct leakage.

## 3. Delivery and Marketing Strategy

TEP provides program management, oversight, and marketing. All measures except Smart thermostats are provided by Proctor Engineering Group, a third party IC is responsible for: i) recruitment, training, and mentorship of participating contractors; ii) data tracking; iii) rebate processing; and, iv) technical support.

Smart thermostats will be delivered by a combination of thermostat manufacturers, retailers, and approved trade contractors who complete required training on sales and installation of Smart thermostats.

TEP provides program marketing and customer awareness-building through website promotion, community interest groups, mass-market channels (e.g., radio, newspaper, etc.), brochures, bill inserts, high bill inquiries, and trade ally marketing efforts.

## 4. New Measures for 2016

TEP seeks to significantly increase the impact this program has on peak demand through expanding the options for customers to participate. TEP is therefore requesting approval to add Advanced Tune-up, Western cooling controls, BPM/ECM plus motors and Smart thermostats to the measures currently approved in the Existing Homes program. TEP is requesting Commission consideration for approval of these measures due to the positive societal cost test and the significant market potential for residential customers in the TEP service territory.

**Table 3-2. Existing Homes New Measures<sup>3</sup>**

	<b>Program Measures</b>	<b>Base Efficiency</b>	<b>High Efficiency</b>	<b>Avg. Incentive p Unit</b>	<b>Estimated Participation</b>	<b>Societal Cost Test</b>
1	HVAC Advanced Tune-up	No tune-up	Proper air-flow, refrigerant charge and coil cleaning	\$150	6,000	2.2
2	WCC_Stand alone	No control	Western Cooling Control	\$70	1,000	3.1
3	BPM/ECM + motor	Conventional motor and control	BPM/ECM control & EE motor	\$300	100	1.2
4	Smart Thermostat	Standard thermostat	Smart thermostat	\$89	1,500	1.9

<sup>3</sup> Additional detail on lifetime energy savings, societal benefits/costs, and environmental benefits of new measures is included in Exhibit 1.

Currently approved HVAC measures are only available when customers install a new HVAC system. Energy savings from installation of new HVAC systems is important, but since the average life expectancy of a direct expansion HVAC system is 15 years, the existing measures reach only a small percentage of the 372,000 residential customers. Research shows that 74% of existing HVAC systems are not charged correctly and 70% are operating with incorrect air flow. The new **HVAC Advanced Tune-up** is designed to reduce energy consumption from existing systems that are improperly installed and maintained. These installation and maintenance problems (typically improper charge and air-flow) result in high energy use and higher utility bills for a large percentage of TEP's residential population. This targeted customer group provides a huge untapped market for energy efficiency measures designed to reduce energy use from existing HVAC systems. A similar HVAC tune-up program has already been approved for APS in Decision No. 74406.

**The Western Cooling Control** is an inexpensive and unobtrusive device that attaches to the control wiring of HVAC blower motors to extend the run time of the blower after the AC compressor shuts off thereby drawing extra cool from the fan coil and improving unit efficiency by up to 20%.

**BPM/ECM + motor:** for customers with HVAC systems where basic fan motor replacement is the best option moving to a high efficiency motor will yield significant energy savings at a significantly lower cost than whole unit replacement. TEP rebates will apply to Quality Installed (QI) Brushless Permanent Magnet (BPM) motors or Electrically Commutated Motors (ECMs).

**Smart thermostats** refer to thermostats with two-way connectivity. By offering functionality beyond the basic programmable thermostats, smart thermostats provide an additional opportunity for cost effective energy savings. These devices save energy through the following:

- **Enhanced Programmability:** controversy regarding the real world savings of programmable thermostats led the EPA to end the Energy Star designation for all programmable thermostats in 2009. The EPA describes that these thermostats could theoretically save 10-30% of heating and cooling loads, but the issue was customers were not properly using programmable thermostats. However, the current generation of thermostats resolves this issue by either automatically setting the thermostat schedule based on customer behavior or by facilitating easier adjustments and overrides to the schedule through smart devices and better software.
- **Behavioral Savings:** smart thermostats can achieve behavioral savings with customer coaching (where the software informs customers about the energy and dollar impacts of various temperature set-point changes) and comparison type reports, similar to a home energy report.
- **Improved HVAC Controls (e.g., Free Cooling):** smart thermostats may use humidity sensors, heat pump specific algorithms or free cooling to more efficiently heat or cool the home.
- **HVAC Diagnostics:** smart thermostats are being developed to provide guidance when service may be needed, when to change the filter, or reference HVAC professionals through the device's web app.

Furthermore, these devices can be used to curtail demand when it is cost effective to do so. Similar approaches to curtailing demand have seen low customer satisfaction ratings, but one software vendor received 86% customer satisfaction for a program that called 54 events.

While these devices offer an opportunity for cost effective energy savings and demand management, the market is not fully adopting this measure without additional support or incentives which is why TEP is proposing Smart Thermostats as a new measure within the Existing Homes program.

TEP proposes two possible approaches to incentivize this measure. TEP will consider providing upstream discounts for smart thermostats that customers can install without a contractor. Nest is a prime example of where this channel will work. Through this approach, customers who would have purchased a non-programmable thermostat or a basic programmable thermostat might choose the participant smart thermostat instead.

TEP will also consider offering mail-in rebates through contractor allies for smart thermostats that require contractor installation. Through this channel, TEP will encourage customers who were going to have a basic or non-programmable thermostat installed to install a participant smart thermostat.

TEP will use best efforts to incentivize smart thermostat vendors equally, but may consider targeting specific vendors to reduce program administrative expenses and/or improve cost-effectiveness.

#### 5. Cost-Effectiveness

In Decision No. 74885 the Commission determined the existing measures and the program to be cost-effective. TEP will continue to monitor the cost-effectiveness of the program. Cost-effectiveness detail for the existing and new measures is provided in Exhibit 1.

#### 6. Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

### ***E. Shade Tree***

***TEP is requesting budget approval to continue this program with one (1) additional delivery option for increasing the number of trees distributed.***

#### 1. Program Description

The Shade Tree program is an existing program which promotes energy conservation and environmental benefits by incenting customers to plant desert-adapted trees in targeted locations where the trees will provide shade to dwellings, thereby reducing energy use for air conditioning.

#### 2. Program Objectives and Rationale

The primary objective of the program is to promote the strategic planting of trees to provide shade, thereby reducing energy used for cooling of homes and other buildings. The program also educates school-age children and the public on the conservation and environmental benefits of planting trees.

#### 3. Delivery and Marketing Strategy

Program delivery is provided by Trees for Tucson, a non-profit organization, and consists of a customer completing an application and sending it to Trees for Tucson. Trees for Tucson delivers trees to the customer and provides written information on proper planting, care, and maintenance. The customer pays



\$8.00 per tree. TEP employees currently inform customers about the program during speaking engagements and outreach presentations, website promotion, presentations at schools, and tree care workshops. In 2015, TEP also began distributing trees through retail shows with big box stores. The benefits of retail show distribution for trees is significantly lower costs to TEP and no payment requirement from the customer. TEP added the cost normally paid by the customer as a program delivery cost, the BC for this distribution method is far better than distribution through Trees for Tucson. TEP intends to expand on this distribution channel in 2016.

4. New Measures for 2016

No new measures are included for 2016.

5. Cost-Effectiveness

In Decision No. 74885, the Commission determined the program to be cost-effective. TEP will continue to monitor the cost-effectiveness of the program. Cost-effectiveness detail for the existing measures is provided in Exhibit 1.

6. Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

***F. Low-Income Weatherization***

***TEP is requesting budget approval to continue this program with one (1) additional delivery option for increasing the number of homes weatherized.***

1. Program Description

The LIW program is an existing program which helps conserve energy and lower utility bills in TEP households with limited incomes. Weatherization measures fall into four major categories: i) duct repair; ii) pressure management/infiltration control; iii) attic insulation; and iv) repair or replacement of non-functional or hazardous appliances. Weatherization is conducted in accordance with the Weatherization Assistance Program ("WAP"), a program funded by the U.S. Department of Energy. Household income and participation guidelines will be consistent in an on-going manner with current policy criteria used by the Governor's Office on Energy Policy ("GOEP").

2. Program Objectives and Rationale

The main objectives of the program are to lower low-income customer's energy consumption in conjunction with GOEP and WAP rules, as well as to increase the number of homes weatherized annually. Program funds provide up to \$3,000 per residence to be used for energy efficient weatherization measures, equipment replacement and/or repair, etc. Community action agencies are allowed to use up to 25% of their annual budget for Health and Safety related repairs. Agencies may request a waiver of the \$3,000 limitation on a case-by-case basis.

3. Delivery and Marketing Strategy

The program is delivered by community action agencies approved by the GOEP. Agencies in Tucson include Pima County Community Services (“PCCS”) and Tucson Urban League (“TUL”). Both provide program administration, planning, promotion, and verification of participant eligibility, as well as labor, materials, equipment and tracking software. Funding is provided to both agencies from TEP upon documentation of work completed.

DSM revenues are not allocated for advertising and promotion. Program promotion occurs mainly through community action agency partners that deliver presentations to community organizations, by leaving information at neighborhood community and recreation centers, and/or by responding to calls directed from TEP. TEP also promotes the program through its website and provides information during speaking engagements and outreach presentations.

4. New Measures for 2016

No new measures are included for 2016

5. New Delivery Options for 2016

For many years the TEP weatherization program has not seen growth in participation of households due to limitations of agencies using WAP guidelines. TEP began working with agencies to determine additional delivery options to increase the number of weatherized homes and to use more of the Commission approved funding for weatherization assistance. In 2015, TEP worked with TUL, an approved community action agency, on a pilot project to weatherize an additional 50 homes in the Tucson area using a modified delivery option. The pilot project continued to concentrate efforts on: i) duct repair; ii) pressure management/infiltration control; and iii) repair or replacement of non-functional or hazardous appliances but the pilot project also allowed iv) replacement of inefficient refrigerators and v) installation of energy efficient lighting to the list of approved activities which are also approved measures in other TEP programs. TEP plans to continue this delivery model in 2016 to increase the number of weatherized homes and to use Commission approved funding that is not exhausted by community action agencies using WAP guidelines.

6. Cost-Effectiveness

In Decision No. 74885, the Commission determined the program to be cost-effective. TEP will continue to monitor the cost-effectiveness of the program. Cost-effectiveness detail for the existing measures is provided in Exhibit 1.

7. Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

**G. Multi-Family**

*TEP is requesting budget approval to continue this program with all previous measures and requests approval for two (2) new HVAC tune-up measures, a duct test and repair measure and Residential LEDs for 2016.*

**1. Program Description**

The Multi-Family program is an existing program that targets multi-family properties with 5 dwelling units or more to install efficient lighting (CFLs or LEDs) and low-flow water devices. Additionally, multi-family facility managers are encouraged to partake in the C&I Facilities program, which promotes measure installation for the common areas. TEP is requesting approval to add Advanced Tune-up, Western Cooling Controls (WCC) and Duct Testing and Repair as HVAC tune-up components in 2016.

**2. Program Objectives and Rationale**

The EE potential in the multi-family housing market remains largely underutilized and represents a significant potential to increase the Company's program portfolio. Because of various market barriers, such as split incentives, capital constraints, and lack of awareness, EE improvements typically fall far below on a multi-family housing unit's priority list. Through the direct installation and renovation/rehabilitation implementation framework, this program fills the gap and provides substantial energy savings.

The objectives of the program are: i) to reduce peak demand and overall energy consumption in the multifamily housing market; ii) to promote EE retrofits for both dwelling units and common areas; and iii) to increase overall awareness about the importance and benefits of EE improvements to the landlord and property ownership community.

**3. Delivery and Marketing Strategy**

Program delivery for existing measures is provided by TEP staff. Upon receiving Commission approval for the HVAC Advanced Tune up measures, the new measures will be provided by a 3<sup>rd</sup> party implementation contractor who will be responsible for the entire tune-up portion of the program.

Marketing and communications strategies include notifying complex managers and owners through updates to the website, training seminars, call center on-hold messages, direct mail promotion, outreach to rental housing industry associations, and working with contractors and industry specialists. Primary emphasis is placed on low-income, subsidized housing complexes and on larger, older, and less efficient complexes.

**4. New Measures for 2016**

TEP is requesting approval to add Advanced Tune-up, Western Cooling Controls (WCC), and Duct Testing and Repair to the measures currently approved in the Multi-Family program. TEP is requesting Commission consideration for approval of these HVAC tune-up measures due to the positive societal cost test and the significant market potential for residential customers in the TEP service territory.

Table 3-3 presents new measures to be incentivized by the program in 2016.

**Table 3-3. Multi-Family New Measures<sup>4</sup>**

	Program Measures	Base Efficiency	High Efficiency	Avg. Incentive p Unit	Estimated Participation	Societal Cost Test
1	HVAC Advanced Tune-up	No Tune-up	Proper air-flow, refrigerant charge and coil cleaning	\$125	1,100	2.1
2	WCC_Stand alone	No control	Western Cooling Control	\$55	400	3.3
3	Duct Test & Repair	No DTR	With DTR	\$175	800	3.3
4	Residential LED	Incandescent	LEDs	\$4.50	6,000	1.8

Currently approved measures do not provide energy saving opportunities from the HVAC system which is responsible for the highest percentage of energy use in multi-family homes. The new **HVAC Advanced Tune-up** measures are designed to reduce energy consumption from existing HVAC systems that are improperly installed and maintained. Research shows that in single family housing, 74% of existing HVAC systems are not charged correctly and 70% are operating with incorrect air flow. This percentage is anticipated to be even higher for multi-family projects. These installation and maintenance problems (typically improper charge and air-flow) result in high energy use and higher utility bills for TEP's residential population living in multi-family housing projects. This targeted customer group provides a huge untapped market for energy efficiency measures designed to reduce energy use from existing HVAC systems.

**The Western Cooling Control** is an inexpensive and unobtrusive device that attaches to the control wiring of HVAC blower motors to extend the run time of the blower after the AC compressor shuts off thereby drawing extra cool from the fan coil and improving unit efficiency by up to 20%.

**Duct Test and Repair:** Duct testing and repair through other utility programs show that duct leakage in multi-family housing can average 60%. Because of the design of multi-family housing, many of these duct systems are attached to fan-coil units and are very easy to seal. Repair of duct leakage in multi-family housing can improve the market value for the property owner and significantly reduce energy costs for the residential consumers that are not able to participate in other TEP programs.

TEP is also requesting approval to offer **Residential LED lamps** rather than CFLs in the Multi-Family program as LED technology is currently the most efficient technology available.

<sup>4</sup> Additional detail on lifetime energy savings, societal benefits/costs, and environmental benefits of new measures is included in Exhibit 1.

5. Cost-Effectiveness

In Decision No. 74855 the Commission determined the existing measures and the program to be cost-effective. TEP will continue to monitor the cost-effectiveness of the program. Cost-effectiveness detail for existing and new measures is provided in Exhibit 1.

6. Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

## **IV. Commercial & Industrial Programs**

The following section presents a summary of TEP's C&I programs.

### **A. C&I Comprehensive**

*TEP is requesting budget approval and approval to offer all existing measures and fourteen (14) additional measures in 2016.*

#### **1. Program Description**

The C&I Comprehensive program is an existing program which offers incentives for a select group of retrofit and replace-on-burnout ("ROB") EE measures in existing facilities. Eligible participants include small and large commercial customers, industrial customers, schools and other customers receiving service under a non-residential tariff. The program offers incentives for the installation of EE measures including: lighting equipment and controls; HVAC equipment; motors and motor drives; compressed air; and refrigeration measures.

The incentive levels for C&I measures represent the weighted result of the average incentive for a measure, which varies depending on the tons or horsepower of the equipment being rebated. The actual incentive for a particular measure may vary due to the size of the equipment being installed. With the exception of custom measures, the incentive levels for the C&I Comprehensive program have been designed to not exceed 75% of incremental costs.

#### **2. Program Objectives and Rationale**

The C&I Comprehensive program is designed to address barriers of entry for this market segment, including issues of limited investment capital, limited awareness of energy cost savings, and required short-term payback. The program's purpose is to persuade large business customers to install high-efficiency equipment at their facilities and encourage contractors to promote the program.

#### **3. Delivery and Marketing Strategy**

The C&I Comprehensive program is offered to commercial customers through either self-install or utilizing an installing contractor. Contractors work with individual customers and the customers receive incentive payment after installation of EE equipment. The program also provides consumers and trade allies with educational and promotional pieces designed to arm decision makers in the commercial market with the ability to make informed choices.

The marketing strategy includes education seminars tailored to the business market, website promotion, outreach and presentations at professional and community forums, and direct outreach to customers.

#### **4. New Measures for 2016**

Table 4-1 presents new measures to be incentivized by the program in 2016. Many of the measures passed cost-effectiveness screening by Commission Staff in Decision No. 74885 (December 31, 2014) and are listed in Appendix 1-B thereof. These measures were not recommended for approval in the 2015 program. Due to the positive societal cost test for each measure, TEP is requesting Commission reconsideration for approval of these new measures.

**Table 4-1. C&I New Measures<sup>5</sup>**

	<b>Program Measures</b>	<b>Base Efficiency</b>	<b>High Efficiency</b>	<b>Avg. Incentive</b>	<b>Estimated Participation</b>	<b>Societal Cost Test</b>
1	LED Outdoor Lighting	15-100 W Incan and 70-1000 W HID	3-184 Watt LED	\$15	250	2.3
2	LED Tubes replacing fluorescent Indoor	34-40 Watt T12 or T8	17-20 W LED	\$10	250	2.3
3	LED Tubes replacing fluorescent Outdoor	34-40 Watt T12 or T8	17-20 W LED	\$10	250	2.1
4	Economizers	No economizer	With economizer	\$160	5	3.7
5	EMS_HVAC Delivery	No controls	EMS controls	\$0.26/ sq. ft.	5,000	2.6
6	Evaporative fan controls	No controls	With controls	\$75	5	1.9
7	Pulse Start MH_Interior	565 Fixture Watts	394 Fixture Watts	\$100	10	1.7
8	Pulse Start MH_Exterior	472 Fixture Watts	372 Fixture Watts	\$90	10	1.4
9	PTAC	10.2 EER Base Unit	11.2 EER Unit	\$44	200	12.1
10	PTHP	10.0 EER Base Unit	11.3 EER Unit	\$44	200	12.3
11	Variable Refrigerant Flow	Standard refrigerant flow	Variable refrigerant flow	\$2 / kBtuh	200	3.7
12	Window Films	No film	With Film	\$1.75 / sq. ft.	250	3.7
13	Induction Lighting_Outdoor	67 to 1180 W MH or HPS wtd avg	23 to 409 W Induction wtd avg	\$126	25	1.9
14	Energy Intelligence Software	No EIS software	With EIS software	\$3,000	3	1.9

**LED lighting** is the most efficient lighting technology currently available and TEP is requesting to expand the approved selection of LED to include outdoor applications and LED replacements for linear fluorescent lamps. **Package terminal AC and HP's** have the highest BC ratio of any measure in our Commercial Portfolio and are an important addition for hotels, motels, resorts, etc. **Evaporative fan controls, Pulse start-MH, Economizers and Variable refrigerant flow systems** have been incented through TEP's custom measure analysis for a several years, are cost effective and but continue to gain popularity. Incenting these technologies as prescriptive measures reduces administrative costs and increases Program cost-effectiveness.

**Energy management systems** are gaining popularity and have historically been incented through TEP's custom measure analysis. TEP proposes a prescriptive Energy Management System (EMS) measure for this program. A prescriptive measure will leverage the potential savings benefits associated with an EMS, and promote high-impact savings. TEP proposes a prescriptive EMS measure that will require the following:

- Central control of HVAC operations must be established and the EMS must permit control of all systems from a single interface (i.e., all controlled floor space associated with the incentive). Central control requirements include:

<sup>5</sup> Additional detail on lifetime energy savings, societal benefits/costs, and environmental benefits of new measures is included in Exhibit I.

- Facility-wide time control
- Remote interface with all thermostats and controllers
- Web-based interface with PC-based controls
- Graphic operator interface
- Trending capability
- Holiday schedules must be entered for a minimum of one year. For premises with varying schedules (i.e., schools, seasonal occupancy) the occupancy schedules must be entered for a minimum of one year.
- For facilities over 50,000 square feet (the total floor space associated with the EMS control);
  - A pre-inspection is required to document existing conditions.
  - At least one facility staff member whose primary tasks include HVAC equipment, and
  - EMS system management/maintenance will be provided training by the installing EMS contractor and leave-behind instruction manuals.
- Documentation shall be submitted in electronic format along with the application form.
  - Conditioned space related to the application
  - HVAC system type and equipment specifications
- For a given incentive Tier (Tier 1 or 2) and HVAC equipment (direct expansion and/or chillers), a certain number of predefined advanced control strategies must be implemented.

**Energy Intelligence Software (EIS)** allows TEP to position itself as a progressive utility that engages TEP's largest customers and helps them unlock value within their own energy data, ultimately providing value beyond commoditized energy delivery.

Effective energy management starts with visibility into how much electricity you use and when you use it. Managing your cost drivers will yield positive results, but for the biggest return, businesses must take a more holistic approach. EIS provides visibility into when and how much energy is used by buildings and equipment and helps large C&I customers take action to reduce consumption. It can be a powerful tool to provide deep insight into the energy use of these customers.

EIS provides tools for budget tracking and forecasting to provide extensive online energy tracking and trending capabilities. EIS provides customers the ability to gain visibility into the following trends for energy usage and cost:

- Disaggregate drivers of monthly energy spending into price and consumption;
- Access trends by billing month or calendar month;
- Compare consumption over time with a weather normalized baseline; and
- Customized dashboards to track metrics important to each organization.

EIS supports its users with an intuitive workflow to:

- Gain a deep understanding of the energy use (in kWh and costs) of individual buildings or a building portfolio.
- Identify the best and worst performing buildings to decide where to focus effort.
- Identify energy savings opportunities through alerting and visual analysis.
- Measure performance and track savings during and after implementing energy conservation measures against a historical baseline.
- Receive alerts that identify abnormalities in energy use and keep customers continually engaged.



EIS systems will be a great addition to the C&I Portfolio of measures. EIS will initially be targeted to large commercial customers exceeding 4,000,000 kWh annual energy use.

5. Cost-Effectiveness

In Decision No. 74885 the Commission determined each measure and the program to be cost-effective. TEP will continue to monitor the cost-effectiveness of the program. Cost-effectiveness detail for the existing and new measures is provided in Exhibit 1.

6. Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

7. Eligibility

Program eligibility is open to all existing commercial customers within TEP's service territory. This program is targeted to the large commercial and industrial customer, but small business customers and school facilities are allowed to participate as long as funds are available.

***B. Small Business Direct Install***

***TEP is requesting budget approval and approval to offer all existing measures and fourteen (14) additional measures in 2016.***

1. Program Description

The TEP Small Business Direct Install program is an existing program open to participation by all existing small commercial customers and all K-12 schools in the TEP service territory. The program provides incentives for a select group of retrofit and ROB EE measures in existing small businesses, including high-efficiency lighting equipment upgrades, high-efficiency HVAC equipment, lighting controls, programmable thermostats, and selected refrigeration measures. The direct install component utilizes an on-line proposal generation and project tracking application to reduce the transaction costs. TEP pays incentives up to 90% of incremental costs. Small businesses and schools can also participate in the C&I Comprehensive program with reduced incentive amounts.

2. Program Objectives and Rationale

The primary goal of the program is to encourage small commercial customers and schools in TEP's service territory to install EE measures in existing facilities. More specifically, the program is designed to: Encourage installation of high-efficiency lighting equipment and controls, HVAC equipment, energy-efficient refrigeration system retrofits, etc.; Encourage contractors to promote the program and provide turn-key installation services to small business customers; Assure the participation process is clear, easy to understand and simple; and Increase the awareness and knowledge of facility managers and other decision makers on the benefits of high-efficiency equipment and systems.

3. Delivery and Marketing Strategy

TEP has assigned an in-house program manager to oversee the program and provide guidance on program activities consistent with TEP's goals and customer service requirements. The IC working with TEP

provides the primary contact for small business customers. The IC is responsible for application and incentive processing, monitoring the installation contractors, participation tracking and reporting, and overall quality control and management of the delivery process.

The marketing and communications strategy is designed to inform small business customers about how they can participate and realize the benefits of the program. The strategy includes specific outreach to customers and contractors who complete retrofit projects for small business. Another important component of the marketing plan is a focus on the content and functionality of the TEP website, which directs customers to information about the program.

#### 4. New Measures for 2016

Table 4-2 presents new measures to be incentivized by the program in 2016. Many of the measures passed cost-effectiveness screening by ACC Staff in Decision No. 74885 and are listed in Appendix 1-B (December 31, 2014). These measures were not recommended for approval in the 2015 program. Due to the positive societal cost test for each measure, TEP is requesting Commission reconsideration for approval of these new measures.

**Table 4-2. Small Business Direct Install New Measures<sup>6</sup>**

	<b>Program Measures</b>	<b>Base Efficiency</b>	<b>High Efficiency</b>	<b>Avg. Incentive</b>	<b>Estimated Participation</b>	<b>Societal Cost Test</b>
1	LED Outdoor Lighting	15-100 W Incan	3-18 Watt LED	\$27	500	2.0
2	LED Tubes replacing fluorescent Indoor	34-40 Watt T12 or T8	17-20 W LED	\$10	250	2.3
3	LED Tubes replacing fluorescent Outdoor	34-40 Watt T12 or T8	17-20 W LED	\$10	250	2.1
4	Economizers	No economizer	With economizer	\$139	5	2.7
5	EMS_HVAC Delivery	No controls	EMS controls	\$0.26/ sq. ft.	5,000	2.1
6	Evaporative fan controls	No controls	With controls	\$75	5	1.9
7	Pulse Start MH_Interior	565 Fixture Watts	394 Fixture Watts	\$109	25	1.3
8	Pulse Start MH_Exterior	472 Fixture Watts	372 Fixture Watts	\$94	20	1.1
9	PTAC	10.2 EER Base Unit	11.2 EER Unit	\$294	250	5.7
10	PTHP	10.0 EER Base Unit	11.3 EER Unit	\$407	250	5.5
11	Variable Refrigerant Flow	Standard refrigerant flow	Variable refrigerant flow	\$3.76 / kBtuh	400	2.7
12	Window Films	No film	With Film	\$1.16 / sq. ft.	500	1.5
13	Induction Lighting_Outdoor	67 to 1180 W MH or HPS wtd avg	23 to 409 W Induction wtd avg	\$118	25	1.5
14	HVAC System Test and Repair	No test & repair	With test & repair	\$300	300	2.5

<sup>6</sup> Additional detail on lifetime energy savings, societal benefits/costs, and environmental benefits of new measures is included in Exhibit 1.

TEP believes it is extremely important to add more **LED lighting**, as this is the most efficient technology available. **Package Terminal AC and HP's** have the highest BC ratio of any measure in our Commercial Portfolio and are an important addition for hotels, motels, resorts, etc. **Evaporative fan controls, Pulse start-MH, Economizers and Variable refrigerant flow systems** have been incented through TEP's custom measure analysis for several years, are cost effective and continue to gain popularity. Incenting these technologies as prescriptive measures reduces administrative costs and increases Program cost-effectiveness.

**Energy management systems** are gaining popularity and have historically been incented through TEP's custom measure analysis. TEP proposes a prescriptive Energy Management System ("EMS") measure for this Program. A prescriptive measure will leverage the potential savings benefits associated with an EMS and promote high-impact savings. Please see the section description for EMS\_HVAC Delivery under C&I Comprehensive Program above.

5. Cost-Effectiveness

In Decision No. 74885 the Commission determined each measure and the program to be cost-effective. TEP will continue to monitor the cost-effectiveness of the program. Cost-effectiveness detail for the existing and new measures is provided in Exhibit 1.

6. Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

7. Program Eligibility

The program is open to all commercial customers and schools within TEP's service territory taking service under a small commercial rate tariff. These customers are also allowed to participate in the C&I Comprehensive program, as long as funding is still available.

**C. Commercial New Construction**

***TEP is requesting budget approval to continue this program with no additional modifications.***

1. Program Description

The Commercial New Construction program is an existing program that provides incentives for building new commercial facilities that exceed code. The incentive is calculated at \$0.10/kWh for the first year reduction in kWh.

2. Program Objectives and Rationale

The primary goal of the program is to encourage more energy efficient new building design for non-residential projects in TEP's service area. This objective is reached by providing incentives to building owners/developers to build more energy efficient buildings and offering incentives to help off-set the cost of efficient equipment. The program helps overcome market barriers, such as lack of awareness and knowledge about the benefits of a more energy efficient building, and the cost and the performance of EE

measures. It encourages building owners/developers and the design community to consider EE options as early in the design process as possible.

3. Delivery and Marketing Strategy

There are no significant changes in implementation approach, delivery or marketing strategy for the items in this program.

4. New Measures for 2016

There are no individual measures in the Commercial New Construction program.

5. Cost-Effectiveness

In Decision No. 74885 the Commission determined the program to be cost-effective. TEP will continue to monitor the cost-effectiveness of the program. Cost-effectiveness detail for the existing and new measures is provided in Exhibit 1.

6. Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

**D. Bid for Efficiency Program**

*TEP is requesting budget approval to continue this program with no additional modifications.*

1. Program Description

The BFE program is an existing program designed to take an innovative approach to EE by using elements of competition and the potential for high rewards to enhance customer interest. BFE involves a pool of funds that are bid on through unique proposals, including costs, savings and incentives, which are unique to that project. TEP selects winning applicants based on specified criteria. BFE participants and project sponsors include commercial customers, Energy Service Companies ("ESCOs") or other aggregators who organize proposals that involve multiple sites. Results are verified through MER activity.

2. Program Objectives and Rationale

BFE encourages customers and project sponsors to think creatively and to develop projects designed to optimize system energy use as a whole, rather than considering the energy usage of each individual piece of equipment. The program fosters customer-driven project activity (e.g., customers select appropriate measures and professionals to implement measures), and encourages the implementation of comprehensive, multi-measure projects.

3. Delivery and Marketing Strategy

The program is delivered through an IC. TEP markets the program directly to key customers and aggregators. Particular emphasis is paid to key market sectors such as grocery and convenience stores. TEP, and/or its IC, conducts informational meetings with potential participants and project sponsors to explain the program rules and encourage participation.

4. New Measures for 2016

No new measures are included for 2016.

5. Cost-Effectiveness

In Decision No. 74885 the Commission determined the program to be cost-effective. TEP will continue to monitor the cost-effectiveness of the program. Cost-effectiveness detail for the existing measures is provided in Exhibit 1.

6. Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

***E. Retro-Commissioning***

***TEP is requesting budget approval to continue this program with no additional modifications.***

1. Program Description

The RCx is an existing program that uses a systematic approach to identify building equipment and processes that are not achieving optimal efficiency in existing facilities. Eligible program applicants receive subsidized screening energy audits. Participants also receive training to ensure proper operating and maintenance practices over time.

2. Program Objectives and Rationale

The RCx program seeks to generate significant energy savings by retrofitting existing C&I facilities. The program delivers customer benefits by lowering energy bills and improving building performance and occupant comfort while reducing maintenance calls. The program develops an RCx contractor pool, and enables TEP to build relationships with C&I customers, thus leading to other areas of participation in TEP's portfolio of EE programs. RCx programs in other utility service territories have delivered average energy savings in the range of 5-15% per facility, and measures implemented as a result of the program's activity typically pay for themselves in less than two years.

3. Delivery and Marketing Strategy

The RCx program is marketed using traditional forms of media (e.g., print, web, newsletters, etc.), as well as targeted direct mail and outreach to engineering and trade associations. TEP and the IC also reach out directly to contractors who currently are, or could be, practicing in this area. The TEP website includes information and links for participation. TEP account managers have been utilized to reach out to larger customers to encourage participation.

4. New Measures for 2016

No new measures are included for 2016.

5. Cost-Effectiveness

In Decision No. 74885 the Commission determined the program to be cost-effective. TEP will continue to monitor the cost-effectiveness of the program. Cost-effectiveness detail for the existing measures is provided in Exhibit 1.

6. Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

***F. Combined Heat and Power ("CHP")***

***TEP is requesting budget approval to continue this program with no additional modifications.***

1. Program Description

The CHP Program is an existing program. CHP, also defined as "cogeneration", means a system that generates electricity and useful thermal energy in a single integrated system.

2. Program Objectives and Rationale

CHP is an affordable, clean and reliable source of generation and should be considered a key component to economic strategies. The market potential for CHP is limited because only certain commercial customers have a need for thermal energy. TEP will assist customers interested in CHP with engineering and interconnection services. Qualifying CHP customers save on utility bills by not having to utilize a Partial Requirement Service rate.

3. Delivery and Marketing Strategy

Information regarding Rider R-4 is available to customers through TEP's website at [www.tep.com](http://www.tep.com). Local gas providers also notify customers of the advantages of CHP and suggest they contact TEP for assistance.

4. New Measures for 2016

No new measures are included for 2016.

5. Cost-Effectiveness

In Decision No. 74885, the Commission determined the program to be cost-effective. TEP will continue to monitor the cost-effectiveness of the program.

6. Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

7. Other Information

CHP projects are limited because customers must have a need for the heat production to make a project cost-effective. TEP anticipates no additional projects for 2016, and has included only a maintenance savings anticipated from previous projects. By doing this, the benefit and cost calculations are not meaningful and have been removed from the program view showing benefit/costs. If new projects are

identified, they will be cost effective according to Decision No. 74885 and TEP will increase savings estimates and benefit cost calculations accordingly.

**G. C&I Direct Load Control**

*TEP is requesting budget approval to continue this program with no additional modifications.*

1. Program Description

The C&I Direct Load Control program is an existing load curtailment program. Customers are compensated with incentives for their participation at negotiated levels depending on multiple factors, including the size of the facility, amount of kW under load control, and the frequency with which the resource can be utilized.

2. Program Objectives and Rationale

C&I load represents up to 14 percent of the system's demand during peak hours in the late afternoon and evening hours during summer months. Modification to controls for chillers, rooftop AC units, lighting, fans, and other end-uses can reduce power demand at peak times or during emergency situations. In addition, the program may be used to support standard benefits of demand-response programs, which include: i) avoided firm capacity required to meet reserve requirements; ii) reduced or avoided open-market power purchases during periods of high energy prices; iii) and greater grid stability and reduction in outages due to reduced grid demand.

3. Delivery and Marketing Strategy

The program is delivered on a turn-key basis by a third-party IC, who negotiates load reduction agreements with multiple customers. The IC then aggregates these customers to provide TEP with a confirmed and guaranteed load reduction capacity, while maintaining a degree of flexibility in how the curtailments are achieved. Since the demand response aggregator is obligated to provide the required megawatts of load curtailment, the process is similar to a power purchase agreement. Recruitment is targeted to help ensure that customers invited to participate are able to provide reliable and significant load control reductions.

4. New Measures for 2016

No new measures are included for 2016.

5. Cost-Effectiveness

The Commission determined the program to be cost-effective in Decision No. 74885. Cost effectiveness for demand response programs are not determined year by year but by the program life as a whole.

6. Measurement Evaluation and Research

The MER plan is consistent with the previously filed strategy.

## V. Behavioral Comprehensive Programs

This section discusses TEP's continuing behavioral suite of programs.

### A. Behavioral Comprehensive

*TEP is requesting budget approval to continue this program with no additional modifications.*

#### 1. Program Description

The Behavioral Comprehensive program is an existing program that focuses efforts on behavior changes with residences. Technology can only achieve a finite amount of efficiency potential. The barriers to wider spread implementation of EE are sociological, not technological. Capturing full EE potential requires behavior change. All EE programs need to integrate behavior change strategies into the DSM portfolios in order to capture this. Behavioral initiatives apply to all TEP customers.

The types of behaviors to be influenced include:

- Habitual behaviors
  - » Adjust thermostat setting
  - » Turn off unnecessary lights
- Small purchasing and maintenance behaviors
  - » Purchase and install faucet aerators and low flow shower heads
  - » Purchase and install CFLs and LEDs
  - » HVAC maintenance
- Larger purchasing decisions
  - » Purchase an ENERGY STAR® appliance
  - » Purchase higher EE heating and cooling system through participation in a TEP DSM program

The Behavior suite of programs will use four delivery mechanisms to achieve its objectives as shown in Table 5-1.

**Table 5-1. Existing Behavioral Programs**

Behavioral Programs			
	Behavior Comprehensive		
1	1a	Direct Canvassing	Door to door awareness and direct install campaign for CFLs and LEDs
2	1b	K-12 Education	Classroom education including take home direct install kits
3	1c	Community Education	"Train the trainer" approach and promotional direct install kits
4	1d	Lighting Outreach Promotions	CFL and LED bulb promotions at outreach events



2. Program Objectives and Rationale

The main objective of the behavioral programs is to provide customers with more information, allowing them to better understand and manage residential energy usage. Several approaches have been implemented and assessed to determine the effectiveness of making this information available. Some of the programs' major objectives include:

- Generation of significant savings for DSM portfolio objectives;
- Development of relationships with TEP customers leading to other areas of participation in TEP's portfolio of DSM programs;
- Promotion of efficient building operations; and
- Lowering customer's energy bills.

3. Delivery and Marketing Strategy

Delivery of the program is by TEP staff, except for the K-12 measure which is delivered by an IC. All TEP residential customers are eligible for this program. Delivery is offered to various groups of customers as selected by TEP and those who attend events.

4. New Measures for 2016

No new measures are included for 2016.

5. Cost-Effectiveness

In Decision No. 74885, the Commission determined each measure and the program to be cost-effective. TEP will continue to monitor the cost-effectiveness of the program. Cost-effectiveness detail for the existing measures is provided in Exhibit 1.

6. Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

## VI. Utility Support Programs

This section discusses TEP's continuing utility support program.

### A. Conservation Voltage Reduction

*TEP is requesting no budget for this program but will continue to count savings toward the EE standard.*

#### 1. Program Description

The Conservation Voltage Reduction ("CVR") program that achieves load reductions through changes in voltage regulation parameters at the substation/feeder level<sup>7</sup>. This change involves a physical adjustment in transformer settings governing voltage at the substation. By adjusting substation voltage, the program impacts energy flows and capacity, including demand coincident with the system peak period(s).

#### 2. Program Objectives and Rationale

Changes in voltage translate into demand and energy savings through the basic physical relationships governing power: Watts = Volts X Amps. For this program, reducing the voltage reduces demand and reduces consumption. The change in voltage targeted by this program is approximately 2 percent which will fall within the tolerance bandwidth required to ensure power quality and equipment performance by end-use customers. In most instances, customers will not notice, nor experience, any negative changes in equipment performance (e.g., air-conditioning, lighting and motor performance and use), resulting from the change in voltage.

#### 3. Delivery and Marketing Strategy

The program was implemented by TEP transmission and distribution engineers and contractors at selected substations and circuits. Program monitoring including investigation and resolution of any voltage issues will be performed during implementation. There are no customer costs, incentives or marketing activities for this program as customer participation is not solicited.

TEP staff is responsible for administering the program. Staff responsibilities include coordination, planning, and implementation of all program activities. MER activities will be conducted by a third-party contractor.

#### 4. New Measures for 2016

There are no individual measures within the Conservation Voltage Reduction program.

#### 5. Cost-Effectiveness

In Decision No. 74885, the Commission determined the program to be cost-effective. TEP will continue to monitor the cost-effectiveness of the program. Cost-effectiveness detail for is provided in Exhibit 1.

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<sup>7</sup> Schneider, et al. "Evaluation of Conservation Voltage Reduction (CVR) on a National Level." Pacific Northwest National Laboratory. July 2010.

6. Measurement, Evaluation, and Research

MER activities relating to the CVR program focuses on verification of planning assumptions through analysis of energy and demand data for the chosen circuit(s) for one year pre-program compared to data gathered during the first year of the program and normalized for weather. Data collection started in November 2014 and program savings will be adjusted after TEP has a full year of data from the CVR projects verified by a 3<sup>rd</sup> party MER contractor.

7. Target Market

The CVR program incorporates voltage regulation techniques on selected circuits which includes both residential and non-residential customers. TEP performed a review of its distribution system and selected a substation for the initial program with 4 feeders that are relatively short so as to minimize risk of lowering voltage at the end of the line to unacceptable levels.

8. Program Eligibility

Customers benefit from this program with no out-of-pocket expense.

## VII. Support Programs

Support programs cut across the other program areas and provide technical and financial support for the effective implementation of all other programs.

### A. Consumer Education and Outreach

*TEP is requesting budget approval to continue this program with no additional modifications.*

#### 1. Program Description

The Consumer Education and Outreach program is an existing program intended to increase participation in the Company's other DSM/EE programs, but is also intended to effect a broader market transformation, including changes in customer's behavior. The program includes two basic educational components:

- General EE advertising component will cover seasonal ads that encourage energy savings through energy saving tips, marketing the on-line energy audit, and marketing other EE programs to customers; and
- Time-of-Use ("TOU") education to teach residential and small commercial customers about the benefits of TOU rates and enable customers to maximize savings through load shifting.

#### 2. Program Objectives and Rationale

The program consists of education and marketing material to inform customers about the benefits of energy conservation and how to achieve energy savings. Because the aim of this program is to change behavior, it is difficult to objectively assess cost effectiveness or measure actual energy or environmental savings.

#### 3. Delivery and Marketing Strategy

There are no significant changes in implementation approach or delivery strategy for the items in this program.

#### 4. New Measures for 2016

No new measures are included for 2016.

#### 5. Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

***B. Energy Codes and Standards Enhancement Program***

*TEP is requesting budget approval to continue this program with no additional modifications.*

***1. Program Description***

ECSEP is an existing program that strives to maximize energy savings through adherence to local building energy codes and through enhanced energy efficient appliance standards. The program will employ a variety of tactics aimed at: i) improving levels of compliance with existing building energy codes and appliance standards; and ii) supporting periodic updates to energy codes and appliance standards as warranted by market conditions. Specific program activities will depend on the needs of the local code officials. The program will include:

- Better educating local code officials and building professionals on existing standards;
- Providing documentation of the specific local benefits of code enforcement, which can promote energy code changes over time;
- Ensuring utility incentive programs align with local energy codes and appliance standards; and
- Collaboration with relevant stakeholders to build a more robust community, with the goal of advancing strong, effective building energy codes and appliance standards across the local jurisdictions within UNS Electric service territories.

***2. Program Objectives and Rationale***

Increase energy savings in new construction and renovated buildings, in both the residential and commercial sectors, through improving levels of compliance with existing building energy codes, supporting periodic energy code updates as warranted by market conditions, and advocating for higher efficiency electric appliances.

***3. Delivery and Marketing Strategy***

Program activities were selected based on previously effective approaches used in other jurisdictions, such as California and Massachusetts, as well as feedback from local code officials, and municipal leaders in locations that currently lack building codes. Program staff maintains a consistent level of activity and engagement with relevant stakeholders. Activities include: participation in energy code adoption committees, technical support (calculations, research, information) for code adoption committees, public testimony in support of code adoption before city councils, participation in organizations that promote increased appliance standards for EE (such as the Consortium for Energy Efficiency), ensuring that ongoing DSM programs align well with energy code requirements and appliance standards, and funding for local agencies to enforce and improve energy codes and appliance standards over time.

In addition to the ongoing efforts, TEP provided a letter to support in March 2015 for a DOE grant application for the Arizona Governor's Office of Energy Policy ("GOEP") to promote education and awareness of energy efficiencies and savings in wastewater facilities in the State of Arizona. If approved, TEP would provide financial support to the GOEP in providing wastewater operator training in Arizona.

Marketing strategy includes website promotion, direct outreach to local code officials and networks of municipal leaders who are members of committees conducting activities related to building code enhancement and communications with other TEP EE program implementation staff.

4. New Measures for 2016

No new measures included in the program for 2016.

5. Measurement, Evaluation, and Research Plan

The MER plan is consistent with the previously filed strategy.

## VIII. Portfolio Management

TEP serves as the program administrator for the EE Portfolio. To take advantage of the positive experiences from other jurisdictions, TEP implements programs through a combination of third-party ICs and utility staff. TEP designs programs on the most cost-effective basis utilizing ICs when they provide the lowest cost per kWh and, likewise, utilizing TEP staff when their use provides the lowest cost per kWh. ICs are selected through a competitive request for proposal process for delivery of programs.

TEP provides high-level administrative, contract management, program design and marketing oversight of the selected ICs. A portfolio of this size and scope requires careful management oversight. TEP has a dedicated group of EE program staff overseeing third-party implemented programs and promotion of cross-sector education and awareness activities.

TEP staff takes primary responsibility for general EE education and awareness strategies and activities, including maintaining the Company's website, and distributing mass-market general education and efficiency awareness promotions.

### A. Portfolio Management Overview

In summary, TEP provides comprehensive program contract oversight, strategic planning, including management, financial planning and budgeting, as well as:

- High-level guidance and direction to the ICs, including review and revision of proposed annual implementation plans and proposed milestones. The Company will additionally engage with the contractor team on a daily basis when working through strategy and policy issues;
- Review and approval of IC invoices and ensure program activities are within budget and on schedule;
- Review of IC operational databases for accuracy, ensuring incorporation of data into TEP's comprehensive portfolio tracking database to be used for overall tracking and regulatory reporting;
- Review of measure saving estimates maintained by the IC;
- Oversight and coordination of evaluation, measurement, and verification of ICs;
- Public education and outreach to community groups, trade allies, and trade associations;
- Provide guidance and direction on new initiatives or strategies proposed by the ICs;
- Communicate to ICs the other TEP initiatives that may provide opportunities for cross-program promotion;
- Review and approve printed materials and advertising plans from ICs;
- Create and provide collateral material for advertising on programs delivered by the utility;
- Evaluate portfolio and program effectiveness, and recommend modifications to programs and approach as needed; and
- Perform periodic review of program metrics, conduct investment analysis, and review evolving program design.

***B. Marketing and Outreach Strategy***

The marketing and outreach strategy for this portfolio of programs encourages participation among customers, key market players, and trade allies. The objective of the marketing and communications strategy is to make customers and key market actors aware of the Company's program offerings and benefits, and to influence their decision to use more energy efficient options making when purchasing or installing energy systems or equipment.

The specifics of the marketing strategy depend on the program and the demographics of the group being engaged. Depending on the market to be reached, marketing will generally include a mix of broadcast, Internet, print media, radio, direct contact, direct mail, bill inserts, or presentations. The program descriptions describe the proposed marketing approach for each program.

Additionally, TEP works with regional, state, and national programs and partners to optimize cooperative marketing programs and campaigns. Marketing efforts are designed to dovetail with other statewide or regional efficiency programs and campaigns, including those offered by APS and UNS Electric.

***C. Tracking and Reporting***

TEP built a comprehensive internal tracking and reporting system to record all activities from the portfolio of programs. ICs will be responsible for tracking and reporting EE program activities by entering details of each project into the comprehensive data tracking system. The system allows customized reporting to meet reporting requirements in a quick, transparent and accurate manner

***D. Midstream Adjustments***

While this plan presents detailed information on approach, EE measures and proposed incentive levels, unforeseen changes in the market condition, requires regular review and revisions of portions of this plan to reflect this new information. As such, adjustments to these programs may be necessary. When this is the case, the Company will update the Commission in a timely manner and give the Commission opportunity to provide input.

***E. Inter-Utility Coordination***

TEP works with APS, UNS Electric and other utilities to maximize the effectiveness of the programs; in particular, where gas and electric services overlap, regular communication and coordination will be necessary. This collaboration involves working together to identify savings opportunities, as well as providing consistent messaging and parallel programs to reduce confusion and difficulty for customers and trade allies. TEP intends to continue collaboration with others to provide cohesive marketing messages, as well as designing incentive programs, incentive forms and incentive levels that are easily transferable with adjacent utilities.



***F. Leveraging Other Efficiency Initiatives***

Within Arizona, several entities and initiatives are promoting EE including: the state government; Southwest Energy Efficiency Project (“SWEEP”); U.S. Environmental Protection Agency and U.S. Department of Energy’s “ENERGY STAR®” brand; and Federal tax credits. TEP and its implementation contractors work diligently to remain aware and up to date, and to cooperate with efficiency efforts being directed at Arizona energy users. Wherever feasible, co-marketing efforts are employed in an attempt to send a clear and consistent message on the benefits of EE and the resources available to help achieve it.

***G. Trade Ally Coordination***

Trade allies are essential to effective implementation of any EE program. Trade allies are considered program partners and are regularly informed of the TEP program’s progress. Open communication from trade allies about what is and is not working in the field is essential. To ensure good two-way communication, the Company emphasizes coordination, listening sessions, and frequent communications with these key partners to advance program goals. A schedule of meetings, workshops, educational seminars, program update breakfasts, and clear and concise program descriptions are distributed to the trade allies at the program kick off meetings. Ongoing training and program updates will be a key part of program delivery.

## **IX. DEMAND SIDE MANAGEMENT SURCHARGE**

TEP anticipates a DSMS reset by the Commission subject to the approved budgets for the respective programs. TEP will file a revised updated tariff reflecting the new DSMS approved by the Commission. Attached as Exhibit 2 is a clean and redline draft of the TEP Statement of Charges reflecting the revised DSMS.

Exhibit 1

Existing and New DSM Measures

**EXHIBIT 1 -- TUCSON ELECTRIC POWER COMPANY**  
**Existing Rule Option Rate**  
**Without Freeport**

		Column A	Column B	Column C
Line	Class	2014 RETAIL REVENUE	2014 Retail Sales kWh	EE Revenue by class with Proposed Budget
1	Residential	\$409,964,074	3,726,982,030	\$10,826,279
2	Commercial	261,813,144	2,169,897,460	7,817,451
3	Industrial	170,436,487	2,098,229,046	5,089,045
4	Mining	31,090,046	492,181,751	928,314
5	Other	2,985,249	33,056,513	89,136
6	Total	\$876,289,000	8,520,346,800	\$24,750,226

Proposed DSM/EE Charge to Customers	
\$0.002905	\$/kWh
2.9859%	Percent of Total Bill
2.9859%	Before REST,
2.9859%	Assessments and
2.9859%	Taxes

		2016	
Proposed Budget & Surcharge			Current Budget & Surcharge
7	Total DSM \$	\$22,970,226	\$18,839,760
8	True-up		\$0
9	Performance Incentive	\$1,780,000	\$2,783,923
10	Total DSM Recovery	\$24,750,226	\$21,623,683
11	Percentage of Total Revenue	2.82%	2.35%
12	\$ / kWh	\$0.002905	\$0.002311

Change
\$4,130,466
\$0
(\$1,003,923)
\$3,126,543

13	Non-Residential Retail Sales (kWh)	4,793,364,770
14	Non-Residential DSMS Revenue (If \$/kWh)	13,923,947.48
15	Non-Residential Retail Revenue (\$)	466,324,926
16	Non-Residential Rate	2.9859%

17	Residential Rate	2.64%
18	Non-Residential DSM Surcharge (% of Bill)	2.99%
		2.1009%
		2.4660%

0.54%
0.52%

**EXHIBIT 1 -- TUCSON ELECTRIC POWER COMPANY**  
**Existing Rule Option Rate**  
**Including Freeport**

Line	Class	Column A 2013 RETAIL REVENUE	Column B 2013 Retail Sales kWh	Column C EE Revenue by class with Proposed Budget
1	Residential	\$409,964,074	\$3,726,982,030	\$10,064,385
2	Commercial	261,813,144	2,169,897,460	7,608,557
3	Industrial	170,436,487	2,098,229,046	4,953,058
4	Mining	70,110,123	1,137,188,458	2,037,472
5	Other	2,985,249	33,056,513	86,754
6	Total	\$915,309,077	9,165,353,507	\$24,750,226

Proposed DSM/EE Charge to Customers
\$0.002700 \$/kWh
2.9061% Percent of Total Bill
2.9061% Before REST,
2.9061% Assessments and
2.9061% Taxes

	Proposed Budget & Surcharge	Current Budget & Surcharge
7 Total DSM \$	\$22,970,226	\$20,754,874
8 True-up		0
9 2015 Performance Incentive	\$1,780,000	\$2,783,923
10 Total DSM Recovery	\$24,750,226	\$20,754,874
11 Percentage of Total Revenue	2.70%	2.35%
12 \$ / kWh	\$0.002700	\$0.002311

Change
\$2,215,352
(\$1,003,923)
\$3,995,352
0.35%
\$0.000389

13 Non-Residential Retail Sales (kWh)	5,438,371,477
14 Non-Residential DSMS Revenue	\$14,685,841
15 Non-Residential Retail Revenue	\$505,345,003
16 Non-Residential Rate	2.9061%

17 Residential Rate	2.45%	2.15%
18 Non-Residential DSM Surcharge (% of Bill)	2.91%	2.51%

EXHIBIT 1 -- TUCSON ELECTRIC POWER COMPANY  
DSMS SUMMARY

Historical DSM Expenses vs. Surcharge Balance					
Year	DSM Expenses	Performance Incentive (Collected Following Year)	DSMS Collection	Annual Over(+)/Under(-) Collected	Cumulative Over(+)/Under(-) Collected
2008	\$617,827	NA	\$228,665	(\$389,162)	(\$389,162)
2009	\$7,303,319	\$664,163	\$6,973,735	(\$993,747)	(\$1,382,908)
2010	\$12,840,074	\$924,261	\$9,855,772	(\$3,908,563)	(\$5,291,471)
2011	\$13,168,335	\$1,201,808	\$11,360,178	(\$3,009,965)	(\$8,301,436)
2012	\$7,540,306	\$528,000	\$11,383,305	\$3,314,999	(\$4,986,437)
2013	\$12,096,850	\$404,305	\$16,319,202	\$3,818,047	(\$1,168,390)
2014	\$13,075,222	\$1,610,355	\$21,188,511	\$6,502,934	\$5,334,544
2015		\$2,783,923			
2016					

Forecasted DSM Expenses vs. Surcharge Balance					
Year	DSM Expenses (Forecasted)	Performance Incentive (Collected Following Year)	DSMS Collection (Forecasted)	Annual Over(+)/Under(-) Collected	Cumulative Over(+)/Under(-) Collected
2015	\$18,839,760		\$21,188,511	\$2,348,751	\$7,683,295
2016		\$1,780,000			
2017					
Total	\$85,481,692.58	\$7,112,891.58	\$98,497,879.49	\$7,683,295.33	

EXHIBIT 1 - TUCSON ELECTRIC POWER COMPANY  
FREEPORT HISTORY

Year	Month	Freeport KWh	Actual Paid DSMS	Retail Revenue
2012	1	57,648,950	72,003.54	
2012	2	56,228,608	70,229.53	
2012	3	52,719,161	65,846.23	
2012	4	56,073,005	70,035.18	
2012	5	48,470,614	60,539.80	
2012	6	57,270,296	71,530.60	
2012	7	53,524,178	66,851.70	
2012	8	55,776,535	69,664.89	
2012	9	56,678,469	70,791.41	
2012	10	51,227,783	63,983.50	
2012	11	54,939,256	68,619.13	
2012	12	53,790,665	67,184.54	
2013	1	56,177,729	70,165.98	\$2,929,357
2013	2	57,203,029	71,446.58	\$2,981,860
2013	3	51,628,227	64,519.05	\$2,811,984
2013	4	56,074,879	70,037.52	\$2,920,642
2013	5	44,353,189	55,397.13	\$3,321,119
2013	6	58,550,220	73,129.22	\$4,037,653
2013	7	54,032,018	85,579.34	\$3,435,887
2013	8	57,573,760	91,459.07	\$3,589,586
2013	9	54,707,377	89,325.50	\$3,505,848
2013	10	56,522,019	79,841.06	\$3,133,603
2013	11	49,636,551	72,629.49	\$2,850,563
2013	12	53,407,499	75,772.41	\$2,959,907
2014	1	55,648,379	76,831.09	\$3,015,467
2014	2	55,507,403	76,106.60	\$2,987,033
2014	3	49,360,099	70,774.81	\$2,777,770
2014	4	55,160,048	76,021.05	\$2,983,675
2014	5	53,661,207	88,226.89	\$3,462,730
2014	6	54,854,175	90,980.86	\$3,570,818
2014	7	52,538,127	\$88,101.35	\$3,457,802
2014	8	53,651,045	\$89,609.83	\$3,517,007
2014	9	55,610,849	\$92,735.02	\$3,639,665
2014	10	50,788,624	\$79,931.40	\$3,137,148
2014	11	53,350,234	\$81,718.62	\$3,207,293
2014	12	54,876,517	\$83,155.02	\$3,263,669
2015	1	55,472,632		
2015	2	53,155,349		
2015	3	46,244,146		
2015	4	53,800,249		
2015	5	48,690,000		
2015	6	57,450,000		
2015	7	51,740,000		
2015	8	56,870,000		
2015	9	56,060,000		
2015	10	53,830,000		
2015	11	53,990,000		
2015	12	52,800,000		

Row Labels	Sum of Actual Paid DSMS
2012	\$ 817,280.05
2013	\$ 899,302.35
2014	\$ 478,941.30
<b>Grand Total</b>	<b>\$ 2,195,523.70</b>

Source for Sales: Rate14 FCAST ACTAUG15.xlsm

Source for DSM & Revenues: MDM Download by Month

EXHIBIT 1 - TUCSON ELECTRIC POWER COMPANY  
Revenue Summary Report-YTD

Tucson Electric Power Company  
Revenue Summary Report - Month  
DEC-14  
08-JAN-2015 10:39:43

	2014 Ave Y-T-D Customers	2013 Ave Y-T-D Customers	2014 Y-T-D KWH	2013 Y-T-D KWH	2014 Y-T-D Revenue	2013 Y-T-D Revenue
<b>Retail Sales:</b>						
<b>Residential:</b>						
RT 1 Residential Electric	338,239	335,425	3,331,129,370	3,433,444,922	371,317,516	361,954,808
RT 2F Res Elec Water Htg (Frozen)*	0	963	0	2,223,861	0	184,253
RT 21F Residential TOU (Frozen)	0	1,142	0	21,993,773	0	1,822,024
RT 51 Private Street & Area Light*	1,024	1,049	669,057	684,306	167,176	158,573
RT 70F Residential TOU (Frozen)	0	1,877	0	30,779,842	0	2,574,194
RT 70N-B Residential TOU	0	130	0	1,936,520	0	195,572
RT 70N-C Residential TOU	0	387	0	5,093,148	0	514,048
RT 70N-D Residential TOU	0	296	0	4,083,438	0	412,468
RT 80 Residential TOU	8,089	3,866	111,669,455	47,935,645	10,342,295	4,330,091
RT 8 Residential TOU Super Peak	23	0	196,184	0	18,755	0
RT 201F Special Residential (Frozen)	0	2,407	0	39,544,230	0	3,273,409
RT 201A Special Residential	11,072	8,737	132,152,734	104,826,493	13,638,440	9,884,561
RT 201B Special Residential TOU	665	359	8,920,185	4,395,884	756,865	364,613
RT 201CN Special Residential TOU Sol	0	10	0	121,591	0	10,165
RT 1 Residential Community Solar (1)	1,106	0	11,644,661	11,360,515	1,211,293	1,132,357
Residential Lifeline	15,011	16,289	132,721,384	155,411,357	11,668,736	12,639,307
Residential Unbilled Revenue	0	0	(2,121,000)	2,829,000	843,000	1,549,000
<b>Residential</b>	<b>375,227</b>	<b>372,937</b>	<b>3,726,982,030</b>	<b>3,866,664,525</b>	<b>409,964,074</b>	<b>400,999,444</b>
<b>Commercial:</b>						
RT 10 Small General Service	35,102	35,481	1,720,038,552	1,770,786,419	214,985,292	212,998,828
RT 10 Small Gen Svc Trans Adj (2)	823	459	75,086,017	109,701,261	7,737,551	10,452,763
RT 11 Mobile Home Park (Frozen)	307	329	50,223,542	57,392,445	5,364,500	5,734,328
RT 31 Interruptible Agr. Pumping	0	19	0	7,644,252	0	473,422
RT 43 Water Pumping (2)	593	584	111,182,305	105,673,066	8,893,227	8,218,319
RT 52 Private Street & Area Light*	3,136	3,160	4,946,696	4,988,243	1,460,440	1,371,163
RT 76F General Service TOU (Frozen)	0	485	0	58,963,020	0	5,525,850
RT 76 General Service TOU	1,178	426	166,063,590	56,966,315	18,363,294	6,240,104
RT 10 Small Gen Svc Community Solar	31	0	4,959,241	3,868,782	579,807	445,471
RT 10 Small Gen Svc Trans Adj Comm S	46	0	34,797,517	17,666,985	3,531,032	1,710,581
Commercial Unbilled Revenue	0	0	2,600,000	(6,556,000)	898,000	(624,000)
<b>Commercial</b>	<b>41,215</b>	<b>40,943</b>	<b>2,169,897,460</b>	<b>2,187,094,788</b>	<b>261,813,144</b>	<b>252,546,830</b>
<b>Industrial:</b>						
RT 13 Large General Service	446	479	867,843,842	900,206,286	82,652,678	81,839,519
RT 13 Large General Service PRS	0	1	0	0	0	67,299
RT 13 Lrg Gen Svc Community Solar	6	0	15,312,480	2,891,800	1,286,814	232,044
RT 14 Large Light & Power	3	4	155,865,923	261,579,261	11,485,791	18,402,058
RT 85F & 85AF Large Gen Serv TOU (Fr	0	19	0	15,790,714	0	1,333,004
RT 85 Large General Service TOU	138	110	309,862,925	280,818,425	25,759,043	21,522,881
RT 90F & 90AF Lg Light & Pwr TOU (Fr	1	3	29,638,161	130,687,317	1,697,240	8,331,285
RT 90 Large Light & Power TOU	10	7	717,581,715	522,160,262	47,132,922	32,828,871
Industrial Unbilled Revenue	0	0	2,124,000	(475,000)	422,000	(124,000)
<b>Industrial</b>	<b>604</b>	<b>622</b>	<b>2,098,229,046</b>	<b>2,113,659,065</b>	<b>170,436,487</b>	<b>164,432,962</b>
<b>Mining:</b>						
Large Light & Power - Mining	4	4	1,137,466,458	1,079,386,976	70,072,123	65,089,351
Mining Unbilled Revenue	0	0	(278,000)	(237,000)	38,000	5,000
<b>Mining</b>	<b>4</b>	<b>4</b>	<b>1,137,188,458</b>	<b>1,079,149,976</b>	<b>70,110,123</b>	<b>65,094,351</b>
<b>Other:</b>						
RT 41 Muni Traf. Sig.-Street Light	763	760	22,667,882	22,290,613	1,847,679	1,760,610



RT 47 Muni Traf. Sig.-Str. Light-Sec	561	547	8,478,959	8,302,970	691,720	655,820
RT 50 Public Street Lighting	534	536	1,859,672	1,864,201	429,850	401,174
Public Lighting Unbilled Revenue	0	0	50,000	(108,000)	16,000	(9,000)
Other	1,858	1,843	33,056,513	32,349,784	2,985,249	2,808,604
Total Retail Sales	418,908	416,348	9,165,353,507	9,278,918,139	915,309,077	885,882,192
Less: Duplicate Customers (*)						
Residential	1,024	2,012	0	0	0	0
Commercial	3,136	3,160	0	0	0	0
Add: REST & DSM	0	0	0	0	42,904,605	46,266,734
Add: LFCR	0	0	0	0	11,327,143	2,170,636
Add: ECA	0	0	0	0	604,618	37,468
Total Retail Sales per Sales Report	414,749	411,176	9,165,353,507	9,278,918,139	970,145,443	934,357,028
	=====	=====	=====	=====	=====	=====

\*Customers on more than one rate.

(1) Represents incremental revenue from sale of Bright Community Solar blocks included in other rates.

(2) Pre-TEP Rate Case Settlement Revenue, KWH and Customer Count data previously presented in

"Other" for FERC 445 "Other Sales to Public Authorities" is now presented in "Commercial" for

comparative purposes. As a result, all data prior to 7/1/13 for FERC 445 is shown in "Commercial".

This has no effect on current month data.

Exhibit 2

Draft TEP Statement of Charges (clean and redline)

# **CLEAN**

## **Statement of Charges**



Tucson Electric Power

Tucson Electric Power Company

Sixth Revised Sheet No.: 801-1

Superseding Fifth Revised Sheet No.: 801-1

TEP STATEMENT OF CHARGES

Description	Rate	Effective Date	Decision No.
Rider R-1 – Purchased Power and Fuel Adjustment Clause (PPFAC)	\$0.006820 per kWh	April 1, 2015	74974
Rider R-2 – Demand Side Management Surcharge (DSMS) RESIDENTIAL: NON-RESIDENTIAL: FREEPORT-MCMORAN COPPER AND GOLD (25 MW and above):	\$0.002905 per kWh 2.99% Exempt	Pending	Pending
Rider R-3 – Market Cost of Comparable Conventional Generation (MCCCG) Calculation as Applicable to Rider-4 NM-PRS	\$0.028653 per kWh	April 1, 2015	74973
Rider R-5 – Electric Service Solar Rider (Bright Tucson Community Solar™) Solar Block Energy Rate for Residential Lifeline Discount, Rate R-06-01 Solar Block Energy Rate for Residential Electric Service, Rate R-01 Solar Block Energy Rate for General Service, Rate GS-10 Solar Block Energy Rate for Large General Service, Rate LGS-13 Solar Block Energy Rate for Municipal Service, Rate PS-40	\$0.050198 per kWh \$0.050324 per kWh \$0.048475 per kWh \$0.049371 per kWh \$0.049086 per kWh	February 1, 2011	71835 <sup>1</sup>
Rider R-5 – Electric Service Solar Rider (Bright Tucson Community Solar™) Solar Block Energy Rate for Residential Electric Service, Rate R-01 Solar Block Energy Rate for Small General Service, Rate GS-10 Solar Block Energy Rate for Large General Service, Rate LGS-13	\$0.053463 per kWh \$0.053274 per kWh \$0.053227 per kWh	July 1, 2013	73912
Rider R-6 – Renewable Energy Standard and Tariff Surcharge REST-TS1 Renewable Energy Program Expense Recovery  <u>Monthly Cap</u> For Residential Customers: For Small General Service Customers: For Large General Service Customers: For Large Light & Power Customers: For Lighting Customers:	\$0.008000 per kWh  <u>Monthly Cap</u> \$ 3.76 per month \$ 100.00 per month \$1,015.00 per month \$8,000.00 per month \$ 100.00 per month	January 1, 2015	74884

<sup>1</sup>The Rider R-5 approved by Decision No. 71835 is closed for new enrollment as of July 1, 2013

Filed By: Kentton C. Grant  
Title: Vice President of Finance and Rates  
District: Entire Electric Service Area

Rate: Statement of Charges  
Effective: July 1, 2013  
Decision No.: 73912

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# **REDLINE**

## **Statement of Charges**



# Tucson Electric Power

## Tucson Electric Power Company

SixthFifth Revised Sheet No.: 801-1

Superseding FifthThird Substitute Fourth Revised Sheet  
No.: 801-1

### TEP STATEMENT OF CHARGES

Description	Rate	Effective Date	Decision No.
Rider R-1 – Purchased Power and Fuel Adjustment Clause (PPFAC)	\$0.006820 per kWh	April 1, 2015	74974
Rider R-2 – Demand Side Management Surcharge (DSMS) RESIDENTIAL: NON-RESIDENTIAL: FREEPORT-MCMORAN COPPER AND GOLD (25 MW and above):	<del>\$0.002314</del> 002905 per kWh 2.4662.99% Exempt	January 6, 2015 Pending	74885 Pending
Rider R-3 – Market Cost of Comparable Conventional Generation (MCCCG) Calculation as Applicable to Rider-4 NM-PRS	\$0.028653 per kWh	April 1, 2015	74973
Rider R-5 – Electric Service Solar Rider (Bright Tucson Community Solar™) Solar Block Energy Rate for Residential Lifeline Discount, Rate R-06-01 Solar Block Energy Rate for Residential Electric Service, Rate R-01 Solar Block Energy Rate for General Service, Rate GS-10 Solar Block Energy Rate for Large General Service, Rate LGS-13 Solar Block Energy Rate for Municipal Service, Rate PS-40	\$0.050198 per kWh \$0.050324 per kWh \$0.048475 per kWh \$0.049371 per kWh \$0.049086 per kWh	February 1, 2011	71835 <sup>1</sup>
Rider R-5 – Electric Service Solar Rider (Bright Tucson Community Solar™) Solar Block Energy Rate for Residential Electric Service, Rate R-01 Solar Block Energy Rate for Small General Service, Rate GS-10 Solar Block Energy Rate for Large General Service, Rate LGS-13	\$0.053463 per kWh \$0.053274 per kWh \$0.053227 per kWh	July 1, 2013	73912
Rider R-6 – Renewable Energy Standard and Tariff Surcharge REST-TS1 Renewable Energy Program Expense Recovery  Monthly Cap For Residential Customers: For Small General Service Customers: For Large General Service Customers: For Large Light & Power Customers: For Lighting Customers:	\$0.008000 per kWh  Monthly Cap \$ 3.76 per month \$ 100.00 per month \$1,015.00 per month \$8,000.00 per month \$ 100.00 per month	January 1, 2015	74884

<sup>1</sup>The Rider R-5 approved by Decision No. 71835 is closed for new enrollment as of July 1, 2013

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Title: Vice President of Finance and Rates  
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Rate: Statement of Charges  
Effective: July 1, 2013  
Decision No.: 73912

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